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**40CFR63 SUBPART UUU: CATALYTIC REFORMING UNITS
OPERATION, MAINTENANCE & MONITORING PLAN**

SUMMARY: Evaluation of Operation, Maintenance & Monitoring Plan (OMMP) for Catalytic Reforming Units (CRUs) subject to 40CFR63 Subpart UUU. The OMMP was submitted, as required by §63.1566(b)(7) & §63.1567(b)(6), to describe compliance options, emission limits, monitoring equipment, procedures, equipment maintenance and quality control plans as detailed in §63.1574(f) for Catalytic Reforming Unit No. 2 (Process 5, System 3) and Catalytic Reforming Unit No. 3 (Process 5, System 5).

COMPANY INFORMATION

Company Name: Tesoro Refining and Marketing Company, Facility ID No. 800436
 Mailing Address: P.O. Box 817, Wilmington, CA 90748
 Equipment Location: 2101 E. Pacific Coast Hwy, Wilmington, CA 90744
 Contact Person: Royann Winchester, (310) 522-6125

COMPLIANCE RECORD REVIEW

A query of the AQMD Compliance Database for the past two years (10/1/10 to 10/16/12) identified 9 Notice of Violations (NOVs) and 1 Notice to Comply (NC) that were issued to the Tesoro Refinery (Facility ID 800436). The compliance database indicates that the facility is currently in compliance with applicable rules and regulations.


FEE EVALUATION

The BCAT for 40CFR63 Subpart UUU OMMP plans for CRUs is 666615 [40CFR63UUU/CRU], Schedule C. Fees of \$485.45 were paid when the application was submitted. No additional fees are due.

BACKGROUND for 40 CFR PART 63, SUBPART UUU: National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units (Adopted 04/11/2002, Amended 02/09/2005)

On April 11, 2002, the EPA issued the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Catalytic Cracking Units (CCU), Catalytic Reforming Units (CRU), and Sulfur Recovery Units (SRU) at petroleum refineries. This regulation requires all petroleum refineries that are major sources to meet standards reflecting the application of the Maximum Achievable Control Technology (MACT) for Hazardous Air Pollutants (HAP). This regulation is commonly referred to as "Refinery MACT II" (note that "MACT I" generally refers to 40CFR63 Subpart CC, which also affects petroleum refineries, but was adopted prior to Subpart UUU).

Use of surrogates The HAP that are reduced by this rule include organics (acetaldehyde, benzene, formaldehyde, hexane, phenol, toluene, and xylene); reduced sulfur compounds (carbonyl sulfide, carbon disulfide); inorganics (hydrogen chloride, chlorine); and particulate metals (antimony, arsenic, beryllium, cadmium, chromium, cobalt, lead, manganese, and nickel). The requirements of this regulation focus on

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surrogate pollutants (such as PM, opacity and CO) to represent relative HAP emissions, rather than direct measurements of the HAP. The EPA stated in their response to rulemaking comments¹ that

“the determination of MACT floors for CCU organic HAP and metallic HAP were based on the control technologies used in the industry, complete combustion of vent gases for control of organic HAP and an ESP or Venturi scrubber for control of metallic HAP. Surrogates were used in the standards only to characterize the performance of these best performing technologies. We have used surrogates for listed HAP in several rules because this simplifies compliance demonstrations by allowing the use of well-known methods, i.e., methods used to comply with the other CAA standards such as NSPS, and reduces costs associated with constituent analyses².”

Operation, Maintenance and Monitoring Plan Requirements The requirement to submit a OMMP plan for approval is referenced in Subpart UUU sections covering each source type (CCU, CRU and SRU) and HAP emission category (metal HAP, organic HAP, inorganic HAP and HAP).

The requirement to prepare an OMMP and “operate at all times according to the procedures in the plan” is listed as a work practice standard for CCUs, CRU’s SRU, and bypass lines [§63.1564(a)(3); §63.1565(a)(3); §63.1566(a)(5); §63.1567(a)(3); §63.1568(a)(3); §63.1569(a)(3)].

Submittal of the OMMP is also required as part of the demonstration of initial compliance with the work practice standards for each source type [§63.1564(b)(6); §63.1565(b)(5); §63.1566(b)(7); §63.1567(b)(6); §63.1568(b)(6); §63.1569(b)(3)]. The referenced sections also note that the OMMP should be submitted as part of the Notification of Compliance Status.

Demonstration of continuous compliance with the requirements of this regulation is accomplished partly by complying with and/or maintaining records to document conformance with “the procedures in your operation, maintenance and monitoring plan”. [§63.1564(c)(2); §63.1565(c)(2); §63.1566(c)(2); §63.1567(c)(2); §63.1568(c)(2); §63.1569(c)(2)].

The information required to be in each OMMP is specified in §63.1574(f)(2)(i) through § 63.1574(f)(2)(vii), provided below in **Table P1**. Note that some requirements are specific to the source type (noted in *italics for CRU only* or underline for CCU only) or required only for specific equipment configurations or compliance options. The objective of this evaluation is to assess whether the facility has provided the information required in **Table P1**.

**Table P1. Information Required in 40CFR63 Subpart UUU
Operation, Maintenance and Monitoring Plans for CCUs, CRUs, and SRUs.**

§ 63.1574(f)(2): Each plan must include, at a minimum, the information specified in paragraphs (f)(2)(i) through (xii) of this section.	Applicability
(i) Process and control device parameters to be monitored for each affected source, along with established operating limits.	All
(ii) Procedures for monitoring emissions and process and control device operating parameters for each affected source.	All

¹ Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units – Background Information for Promulgated Standards and Response to Comments: Final Report, U.S. EPA Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711, EPA-453/R-01-011, June 2001.

² EPA-453/R-01-011, June 2001, Comment 1.2



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(iii) Procedures that you will use to determine the coke burn-rate, the volumetric flow rate (if you use process data rather than direct measurement), and the rate of combustion of liquid or solid fossil fuels if you use an incinerator-waste heat boiler to burn the exhaust gases from a catalyst regenerator.	CCU only
(iv) Procedures and analytical methods you will use to determine the equilibrium catalyst Ni concentration, the equilibrium catalyst Ni concentration monthly rolling average, and the hourly or hourly average Ni operating value.	CCU only
(v) Procedures you will use to determine the pH of the water (or scrubbing liquid) exiting a wet scrubber if you use pH strips.	CRU only
(vi) Procedures you will use to determine the HCl concentration of gases from a catalytic reforming unit when you use a colorimetric tube sampling system, including procedures for correcting for pressure (if applicable to the sampling equipment) and the sampling locations that will be used for compliance monitoring purposes.	CRU only
(vii) Procedures you will use to determine the gas flow rate for a catalytic cracking unit if you use the alternative procedure based on air flow rate and temperature.	CCU only
(viii) Monitoring schedule, including when you will monitor and when you will not monitor an affected source (e.g., during the coke burn-off, regeneration process).	all
(ix) Quality control plan for each continuous opacity monitoring system and continuous emission monitoring system you use to meet an emission limit in this subpart. This plan must include procedures you will use for calibrations, accuracy audits, and adjustments to the system needed to meet applicable requirements for the system.	all
(x) Maintenance schedule for each monitoring system and control device for each affected source that is generally consistent with the manufacturer's instructions for routine and long-term maintenance.	all
(xi) If you use a fixed-bed gas-solid adsorption system to control emissions from a catalytic reforming unit, you must implement corrective action procedures if the HCl concentration measured at the selected compliance monitoring sampling location within the bed exceeds the operating limit. These procedures must require, at minimum, repeat measurement and recording of the HCl concentration in the adsorption system exhaust gases and at the selected compliance monitoring sampling location within the bed. If the HCl concentration at the selected compliance monitoring location within the bed is above the operating limit during the repeat measurement while the HCl concentration in the adsorption system exhaust gases remains below the operating limit, the adsorption bed must be replaced as soon as practicable. Your procedures must specify the sampling frequency that will be used to monitor the HCl concentration in the adsorption system exhaust gases subsequent to the repeat measurement and prior to replacement of the sorbent material (but not less frequent than once every 4 hours during coke burn-off). If the HCl concentration of the adsorption system exhaust gases is above the operating limit when measured at any time, the adsorption bed must be replaced within 24 hours or before the next regeneration cycle, whichever is longer.	CRU only
(xii) Procedures that will be used for purging the catalyst if you do not use a control device to comply with the organic HAP emission limits for catalytic reforming units. These procedures will include, but are not limited to, specification of the minimum catalyst temperature and the minimum cumulative volume of gas per mass of catalyst used for purging prior to uncontrolled releases (i.e., during controlled purging events); the maximum purge gas temperature for uncontrolled purge events; and specification of the monitoring systems that will be used to monitor and record data during each purge event.	CRU only

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PLAN EVALUATION

Tesoro submitted the CRUs OMMP to the SCAQMD on October 1, 2007 for the Tesoro Refinery Catalytic Reforming Units (CRUs). This plan was submitted after Tesoro purchased the Los Angeles Refinery from Equilon Enterprises LLC (d.b.a.) Shell Oil Products US. The sale was complete on May 10, 2007.

The Tesoro Refinery has two CRUs that are included in this OMMP: Catalytic Reforming Unit No. 2 (Process 5, System 3), and Catalytic Reforming Unit No. 3 (Process 5, System 5). Both units are semi-generative catalytic reformers, are operated similarly, and use the same compliance options to meet the applicable Subpart UUU requirements.

For CRUs, the facility has requirements for both organic and inorganic HAP Emissions. The compliance options for Subpart UUU requirements are provided in Subpart UUU tables for each equipment type and emission type. For Catalytic Reforming Units (CRU), Subpart UUU includes tables that describe the requirements to comply with emission limits (Table 15, Table 22), operating limits (Table 16, Table 23), continuous monitoring systems (Table 17, Table 24), continuous compliance with HAP emission limits (Table 34), continuous compliance with operating limits for HAP emissions (Table 20, Table 27), and continuous compliance with operating limits (Table 21, Table 28). *(Note that these table numbers are the tables numbered according to Subpart UUU. Other tables in this document are numbered separately and distinguished with a "P"# in the table title.)*

The regulation also includes tables describing requirements for performance testing (Table 18, Table 25) and demonstrating initial compliance with the emission limits (Table 19, Table 26), but these requirements are part of the Notification of Compliance Status, and not the OMMP, which is more concerned with ongoing operation of the affected equipment and how it will be maintained.

Excerpts of the Subpart UUU tables (with the same numbers as in Subpart UUU) are provided below, showing the compliance options selected by the facility. The Tesoro CRU is an existing semi-regenerative catalytic reforming unit with an internal scrubbing system.

Note that the following tables are excerpts from the Subpart UUU tables and do not show all other compliance options, because they were not selected by the facility.

COMPLIANCE OPTIONS/REQUIREMENTS FOR ORGANIC HAP EMISSIONS FROM CRUs

The organic HAP emission limits for CRUs are listed in Table 15. Table 16 shows the operating limits for organic HAP emissions from CRUs. Table 17 shows the requirements for continuous monitoring systems for organic HAP emissions from CRUs.

Table 15 to Subpart UUU of Part 63—Organic HAP Emission Limits for Catalytic Reforming Units

As stated in §63.1566(a)(1), you shall meet each emission limitation in the following table that applies to you.

For each applicable process vent for a new or existing catalytic reforming unit . . .	You shall meet this emission limit during initial catalyst depressuring and catalyst purging operations . . .
1. Option 1	Vent emissions to a flare that meets the requirements for control devices in §63.11(b). Visible emissions from a flare must not exceed a total of 5 minutes during any 2-hour operating period.


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Table 16 to Subpart UUU of Part 63—Operating Limits for Organic HAP Emissions From Catalytic Reforming Units

As stated in §63.1566(a)(2), you shall meet each operating limit in the following table that applies to you.

For each new or existing catalytic reforming unit . . .	For this type of control device . . .	You shall meet this operating limit during initial catalyst depressuring and purging operations. . .
1. Option 1: vent to flare	Flare that meets the requirements for control devices in §63.11(b)	The flare pilot light must be present at all times and the flare must be operating at all times that emissions may be vented to it.

Table 17 to Subpart UUU of Part 63—Continuous Monitoring Systems for Organic HAP Emissions From Catalytic Reforming Units

As stated in §63.1566(b)(1), you shall meet each requirement in the following table that applies to you.

For each applicable process vent for a new or existing catalytic reforming unit . . .	If you use this type of control device . . .	You shall install and operate this type of continuous monitoring system . . .
1. Option 1: vent to a flare	Flare that meets the requirements for control devices in §63.11(b)	Monitoring device such as a thermocouple, an ultraviolet beam sensor, or infrared sensor to continuously detect the presence of a pilot flame.

Continuous compliance with organic HAP emission limits is demonstrated as described in Table 20. Table 21 shows the requirements for continuous compliance with operating limits for organic HAP emissions from CRUs.

Table 20 to Subpart UUU of Part 63—Continuous Compliance With Organic HAP Emission Limits for Catalytic Reforming Units


As stated in §63.1566(c)(1), you shall meet each requirement in the following table that applies to you.

For each applicable process vent for a new or existing catalytic reforming unit . . .	For this emission limit . . .	You shall demonstrate continuous compliance during initial catalyst depressuring and catalyst purging operations by . . .
1. Option 1	Vent emissions from your process vent to a flare that meets the requirements in §63.11(b).	Maintaining visible emissions from a flare below a total of 5 minutes during any 2 consecutive hours.

Table 21 to Subpart UUU of Part 63—Continuous Compliance With Operating Limits for Organic HAP Emissions From Catalytic Reforming Units

As stated in §63.1566(c)(1), you shall meet each requirement in the following table that applies to you.

For each applicable process vent for a new or existing catalytic reforming unit . . .	If you use . . .	For this operating limit . . .	You shall demonstrate continuous compliance during initial catalyst depressuring and purging operations by . . .
1. Option 1	Flare that meets the requirements in §63.11(b)	The flare pilot light must be present at all times and the flare must be operating at all times that emissions may be vented to it	Collecting flare monitoring data according to §63.1572; and recording for each 1-hour period whether the monitor was continuously operating and the pilot light was continuously present during each 1-hour period.

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COMPLIANCE OPTIONS/REQUIREMENTS FOR INORGANIC HAP EMISSIONS FROM CRUs

The inorganic HAP emission limits for CRUs are listed in Table 22. Table 23 shows the operating limits for inorganic HAP emissions from CRUs. Table 24 shows the requirements for continuous monitoring systems for inorganic HAP emissions from CRUs.

Table 22 to Subpart UUU of Part 63—Inorganic HAP Emission Limits for Catalytic Reforming Units

As stated in §63.1567(a)(1), you shall meet each emission limitation in the following table that applies to you.

For . . .	You shall meet this emission limit for each applicable catalytic reforming unit process vent during coke burn-off and catalyst rejuvenation . . .
1. Each existing semi-regenerative catalytic reforming unit	Reduce uncontrolled emissions of hydrogen chloride (HCl) by 92 percent by weight or to a concentration of 30 ppmv (dry basis), corrected to 3 percent oxygen.

Table 23 to Subpart UUU of Part 63—Operating Limits for Inorganic HAP Emission Limitations for Catalytic Reforming Units

As stated in §63.1567(a)(2), you shall meet each operating limit in the following table that applies to you.

For each applicable process vent for a new or existing catalytic reforming unit with this type of control device . . .	You shall meet this operating limit during coke burn-off and catalyst rejuvenation . . .
2. Internal scrubbing system or no control device (e.g. , hot regen system) meeting outlet HCl concentration limit.	The daily average HCl concentration in the catalyst regenerator exhaust gas must not exceed the limit established during the performance test.

Table 24 to Subpart UUU of Part 63—Continuous Monitoring Systems for Inorganic HAP Emissions From Catalytic Reforming Units

As stated in §63.1567(b)(1), you shall meet each requirement in the following table that applies to you.

If you use this type of control device for your vent . . .	You shall install and operate this type of continuous monitoring system . . .
2. Internal scrubbing system or no control device (e.g., hot regen system) to meet HCl outlet concentration limit.	Colormetric tube sampling system to measure the HCl concentration in the catalyst regenerator exhaust gas during coke burn-off and catalyst rejuvenation. The colormetric tube sampling system must meet the requirements in Table 41 of this subpart.

Continuous compliance with inorganic HAP emission limits is demonstrated as described in Table 27. Table 28 shows the requirements for continuous compliance with operating limits for inorganic HAP emissions from CRUs. Table 41 shows additional requirements for the use of colormetric tube sampling systems.

Table 27 to Subpart UUU of Part 63—Continuous Compliance With Inorganic HAP Emission Limits for Catalytic Reforming Units

As stated in §63.1567(c)(1), you shall meet each requirement in the following table that applies to you.

For . . .	For this emission limit . . .	You shall demonstrate continuous compliance during coke burn-off and catalyst rejuvenation by . . .
1. Each existing semi-regenerative catalytic reforming unit	Reduce uncontrolled emissions of HCl by 92 percent by weight or to a concentration of 30 ppmv (dry basis), corrected to 3 percent oxygen.	Maintaining a 92 percent HCl emission reduction or an HCl concentration no more than 30 ppmv (dry basis), corrected to 3 percent oxygen.


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Table 28 to Subpart UUU of Part 63—Continuous Compliance With Operating Limits for Inorganic HAP Emissions From Catalytic Reforming Units

As stated in §63.1567(c)(1), you shall meet each requirement in the following table that applies to you.

For each new and existing catalytic reforming unit using this type of control device or system . . .	For this operating limit . . .	You shall demonstrate continuous compliance during coke burn-off and catalyst rejuvenation by . . .
2. Internal scrubbing system or no control device (e.g., hot regen system) meeting HCl concentration limit	The daily average HCl concentration in the catalyst regenerator exhaust gas must not exceed the limit established during the performance test	Measuring and recording the HCl concentration at least 4 times during a regeneration cycle (equally spaced in time) or every 4 hours, whichever is more frequent, using a colorimetric tube sampling system; calculating the daily average HCl concentration as an arithmetic average of all samples collected in each 24-hour period from the start of the coke burn-off cycle or for the entire duration of the coke burn-off cycle if the coke burn-off cycle is less than 24 hours; and maintaining the daily average HCl concentration below the applicable operating limit.

Table 41 to Subpart UUU of Part 63—Requirements for Installation, Operation, and Maintenance of Continuous Parameter Monitoring Systems

As stated in §63.1572(c)(1), you shall meet each requirement in the following table that applies to you.

If you use . . .	You shall . . .
2. Colorimetric tube sampling system	Use a colorimetric tube sampling system with a printed numerical scale in ppmv, a standard measurement range of 1 to 10 ppmv (or 1 to 30 ppmv if applicable), and a standard deviation for measured values of no more than ± 15 percent. System must include a gas detection pump and hot air probe if needed for the measurement range.


COMPARISON OF OMMP PLAN SUBMITTAL TO REQUIREMENTS

The OMMP plan submitted by the facility was compared against the OMMP requirements for the compliance options selected. A summary of the plan checklist is provided below in **Table P2**. For each applicable plan requirement, compliance with the plan requirement is assessed via a checkmark in the “yes” or “no” column, and remarks are provided with details from the facility’s plan.

The Subpart UUU limitations on CRU operation apply only to the vent streams that are produced when CRU catalyst is being regenerated. CRU catalyst regeneration occurs in 8 steps: 1) Depressurization, Shutdown, Blinding, Set-up, Purging, Regen Start-up; 2) Carbon (Coke) Burn-off; 3) Maintenance Period (no venting); 4) Catalyst Rejuvenation (Oxidation 1); 5) Sulfate Removal, if necessary; 6) Second Catalyst Rejuvenation, if necessary (Oxidation 2); 7) Cool Down; and 8) Reduction.

Step 1 typically takes 24 to 48 hours. The coke burn step (Step 2) typically lasts 3 to 4 days; air is introduced to the reactors in sequence and when all reactor temperatures have reached steady state, the coke burn-off is complete. A process vessel is put into service as an internal scrubber during regeneration events. Chloride is evenly distributed throughout the reactor system, so some chloride ions are contained in the recycle hydrogen at the outlet of the final reactor, forming HCl. The scrubber is necessary to reduce the hydrochloric acid (HCl) emissions to a low level prior to being vented to the atmosphere.

The oxidation step (Step 4) typically lasts less than 24 hours. The scrubbing solution pH is checked throughout the oxidation step to ensure that the scrubbing solution has a pH (alkalinity) sufficiently high to remove the HCl from the vent gas. No venting to the atmosphere takes place in the Cool Down and Reduction Steps.


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Tesoro has two CRUs at their facility: CRU No. 2 and CRU No. 3. Each CRU is a semi-regenerative CRU with an internal scrubber. Each CRU operates such that the catalyst is regenerated approximately every 3 years. The catalyst regenerator vents to the flare only during the first step of catalyst regeneration when the reactor is depressurized to the flare prior to the coke burn-off step.

The internal scrubber is in use only during the coke burn-off and catalyst rejuvenation steps associated with catalyst regeneration. Use of the scrubber is required during that time.

Table P2. Checklist for Subpart UUU Compliance Plan

Subpart UUU OMMP Requirement* [§ 63.1574(f)(2)]	Compliance?		Remarks
	Yes	No	
(i) Process and control device parameters to be monitored for each affected source, along with established operating limits.	√		Continuous presence of pilot flame at flare. Visible emissions while venting to the flare during catalyst regeneration ≤ 5 min during any two hour period. Daily average HCl concentration from internal scrubber vent maintained ≤ 30 ppmv HCl (dry basis, 3% O ₂)
(ii) Procedures for monitoring emissions and process and control device operating parameters for each affected source.	√		Flare: Use thermocouple to continuously detect presence of pilot flame. Alarm indicates if pilot flame not present. Visible emissions ≤ 5 min during any two hour period. Use colorimetric tube sampling for HCl (at least 4 samples or every 4 hours, whichever is more frequent) at internal scrubber vent during regeneration cycle while venting to internal scrubber
(v) Procedures you will use to determine the pH of the water (or scrubbing liquid) exiting a wet scrubber if you use pH strips.	√		<i>Not applicable; facility is not using pH strips</i>
(vi) Procedures you will use to determine the HCl concentration of gases from a catalytic reforming unit when you use a colorimetric tube sampling system, including procedures for correcting for pressure (if applicable to the sampling equipment) and the sampling locations that will be used for compliance monitoring purposes.	√		Colorimetric tube sampling system with a printed numerical scale in 1 to 10 ppmv (or 0-500 ppmv), and a standard deviation for measured values of no more than ±15%. System includes gas detection pump and hot air probe if needed for measurement range. Samples taken and recorded manually at least 4 times during a regeneration cycle (equally spaced in time) or every 4 hours, whichever is more frequent. Daily average calculated as arithmetic average of all samples taken in each 24-hour period from the start of the coke burn-off cycle or for the entire duration of the burn-off cycle if it is less than 24 hours. HCl colorimetric tube sampling taken at internal scrubber vent to the atmosphere.
(viii) Monitoring schedule, including when you will monitor and when you will not monitor an affected source (e.g., during the coke burn-off, regeneration process).	√		The CRU catalyst regenerator vents gases to the flare only during CRU reactor depressurization prior to the coke burn-off step and the initial and final purge steps. Flare monitoring requirements apply only when gases may be vented to the flare during the depressurization step of the catalyst regeneration process. The CRU catalyst regenerators vents gases to the internal scrubber only during the coke burn-off and catalyst rejuvenation steps of catalyst regeneration. Monitoring of HCl is conducted only during these parts of the regeneration process when vent gas is routed to the internal scrubber.

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Subpart UUU OMMP Requirement* [§ 63.1574(f)(2)]	Compliance?	Remarks
(ix) Quality control plan for each continuous opacity monitoring system and continuous emission monitoring system you use to meet an emission limit in this subpart...	√	<i>Not applicable; facility is not using any COMS or CEMS to meet the requirements of this regulation.</i>
(x) Maintenance schedule for each monitoring system and control device for each affected source that is generally consistent with the manufacturer's instructions for routine and long-term maintenance.	√	Colorimetric tube sampling system: QA/QC specified by manufacturer. Internal Scrubbers: confirm that regular scheduled preventive maintenance was completed prior to regeneration.
(xi) If you use a fixed-bed gas-solid adsorption system to control emissions from a catalytic reforming unit, you must implement corrective action procedures if the HCl concentration measured at the selected compliance monitoring sampling location within the bed exceeds the operating limit...	√	<i>Not applicable; facility is not using a fixed-bed gas-solid adsorption system to control emissions from their CRUs.</i>
(xii) Procedures that will be used for purging the catalyst if you do not use a control device to comply with the organic HAP emission limits for catalytic reforming units...	√	<i>Not applicable; facility is using a control device (flare) to comply with the organic HAP emission limits for CRUs.</i>

*Note that requirements (iii), (iv) and (vii) apply only to CCU plans; requirement (iv) applies only to facilities using the equilibrium catalyst Ni concentration compliance option for CCUs; and requirement (vii) applies only if an alternative procedure for gas flow rate based on air flow rate and temperature is used.

Requirements (v), (vi), (xi), and (xii) apply only to CRU plans; requirement (v) applies only if pH strips are being used; requirement (xi) applies only if a fixed-bed gas-solid adsorption system is used; and requirement (xii) applies only if no control device (such as a flare) is used.


Table P2 indicates that the facility has submitted all of the necessary information for the OMMP, and is in compliance with the plan requirements.

RECOMMENDATIONS

The 40CFR63 Subpart UUU Operation, Maintenance and Monitoring Plan for CRUs submitted by Tesoro has been evaluated and found to comply with the applicable requirements specified in the regulation, as summarized below in **Table P3**.

**Table P3. Summary of 40CFR63 Subpart UUU
Operation, Maintenance and Monitoring Plan for Catalytic Reforming Units**

	Requirements for Emissions of Organic HAP (Total Organic Carbon as surrogate) During degassing step of catalyst regeneration	Requirements for Emissions of Inorganic HAP (HCl as surrogate) During coke burn-off and catalyst rejuvenation steps of catalyst regeneration
Compliance option	Vent emissions to a flare that meets the 63.11(b) control device requirements, with visible emissions ≤5 min per 2-hour operating period	Reduce uncontrolled emissions of HCl from internal scrubber vents to a concentration of 30 ppmv (dry basis, 3% O ₂)
Parameters to be monitored	Continuous presence of pilot flame, visible emissions	Daily average HCl concentration in catalyst regenerator exhaust gas
Emission limits	Visible emissions ≤5 min per 2-hour operating period from flare	30 ppmv HCl (dry basis, 3% O ₂) at internal scrubber vent

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**Table P3. Summary of 40CFR63 Subpart UUU
Operation, Maintenance and Monitoring Plan for Catalytic Reforming Units**

	Requirements for Emissions of Organic HAP <i>(Total Organic Carbon as surrogate)</i> During degassing step of catalyst regeneration	Requirements for Emissions of Inorganic HAP <i>(HCl as surrogate)</i> During coke burn-off and catalyst rejuvenation steps of catalyst regeneration
Operating Parameter Limit	Flare pilot light present at all times and flare operating at all times emissions may be vented to it.	Concentration of 30 ppmv (dry basis, 3% O ₂)
Monitoring Procedure	Collect flare monitoring data according to 63.1572, and record for each 1-hour period whether monitor was continuously operating and the pilot light was continuously present during each 1-hour period. Monitor visible emissions.	Measure and record HCl concentration at least 4 times during a regeneration cycle or every 4 hours, using a colorimetric tube sampling system; calculating the daily average HCl concentration for that day (or burn-off period if less than 24 hours), and maintaining the daily average below the applicable operating limit.
Monitoring Schedule	Continuously when emissions may be vented (during depressurization step of catalyst regeneration)	Continuously when emissions may be vented (during coke burn-off and catalyst rejuvenation steps of catalyst regeneration)
QA/QC	Specified by the manufacturer	Specified by the manufacturer
Maintenance Schedule	Preventive maintenance conducted prior to regeneration; per manufacturer recommendation	Preventive maintenance conducted prior to regeneration; per manufacturer recommendation
Bypass lines	None	None

Approval of this plan and inclusion in Section I of the facility's Title V Facility Permit is recommended, subject to the following conditions:

1. Operate at all times according to the procedures in your OMMP.
2. Maintain records to document conformance with the procedures in your OMMP.
3. Submit changes to this OMMP for approval by the Executive Officer [§63.1574(f)(1)].